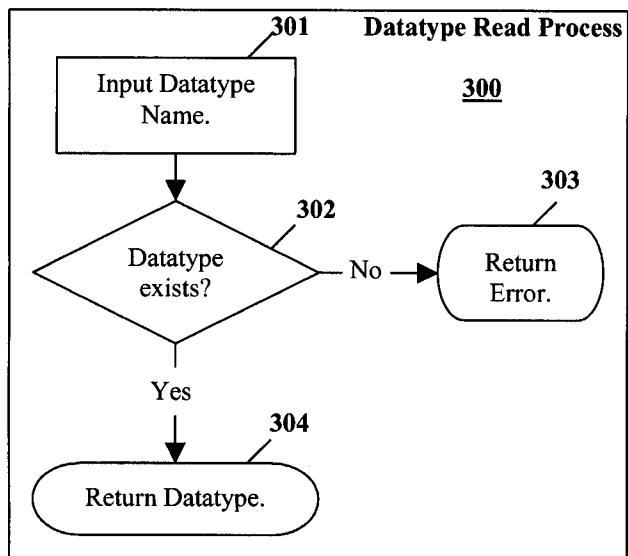


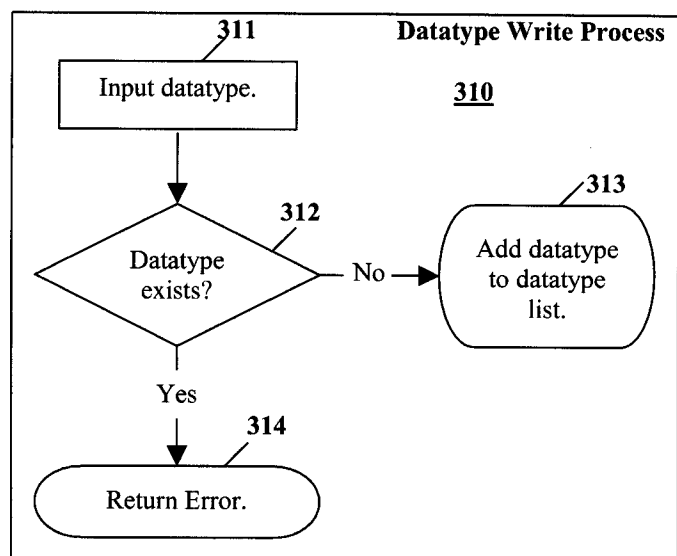
**FIG. 1**

201 DATA\_TYPE = DATA TYPE NAME + [PARENT DATA TYPE REF] + [(ELEMENT)\*]  
202  
203 DATA\_TYPE\_NAME = a name that uniquely identifies this datatype from other datatypes  
204  
205 PARENT\_DATA\_TYPE\_REF = a reference to another datatype using it's DATA TYPE NAME. This value indicates that this datatype is a "descendent" of PARENT DATA TYPE REF  
206  
207 ELEMENT = ELEMENT NAME + [DATA TYPE REF] + [POSITIONAL REFERENCE] + [ALIAS NAME] + [(ELEMENT)\*]  
208  
209 ELEMENT\_NAME = a name that identifies this element  
210  
211 DATA\_TYPE\_REF = a reference to another datatype using it's DATA TYPE NAME. This value indicates that child structure of this element is at least equal to the child structure of the datatype referenced.  
212  
213 POSITIONAL\_REFERENCE = ELEMENT REF  
214  
215 ELEMENT\_REF = a reference to a child element of the datatype specified by DATA TYPE REF in this elements parent element.  
216  
217 ALIAS\_NAME = a reference to a child element of the datatype specified by DATA TYPE REF in this elements parent element. When specifying this value, it indicates that the element referred to by ALIAS NAME is now replaced by ELEMENT NAME

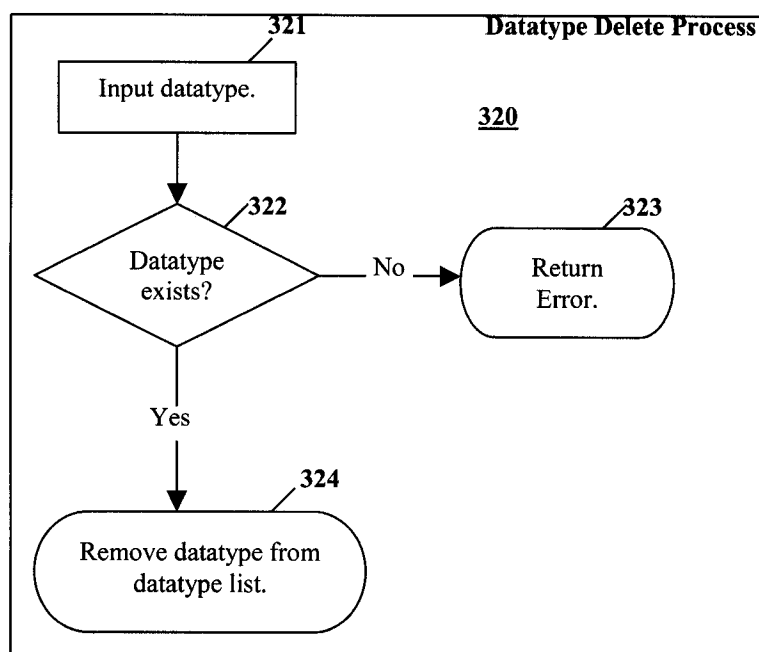
FIG. 2



**FIG. 3A**



**FIG. 3B**



**FIG. 3C**

Locate Process #1: Common Family

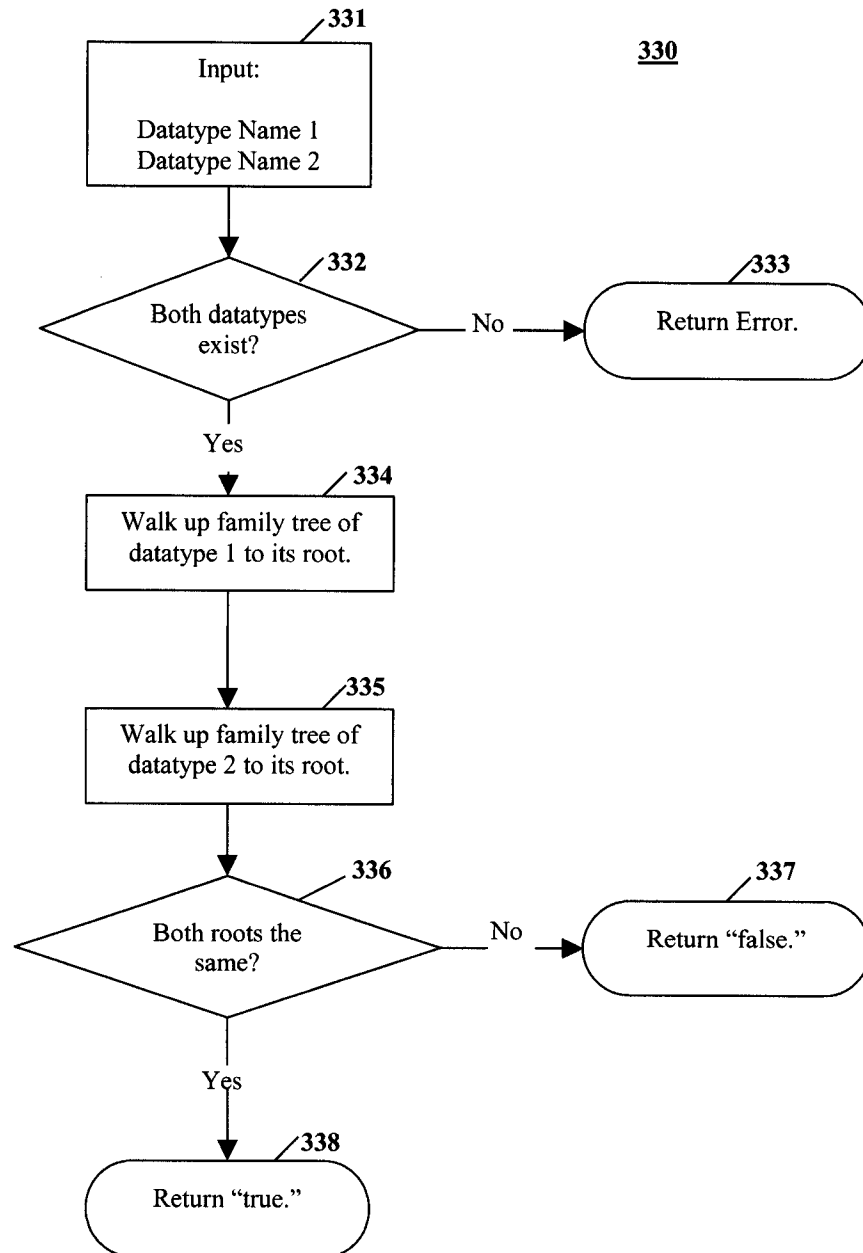


FIG. 3D

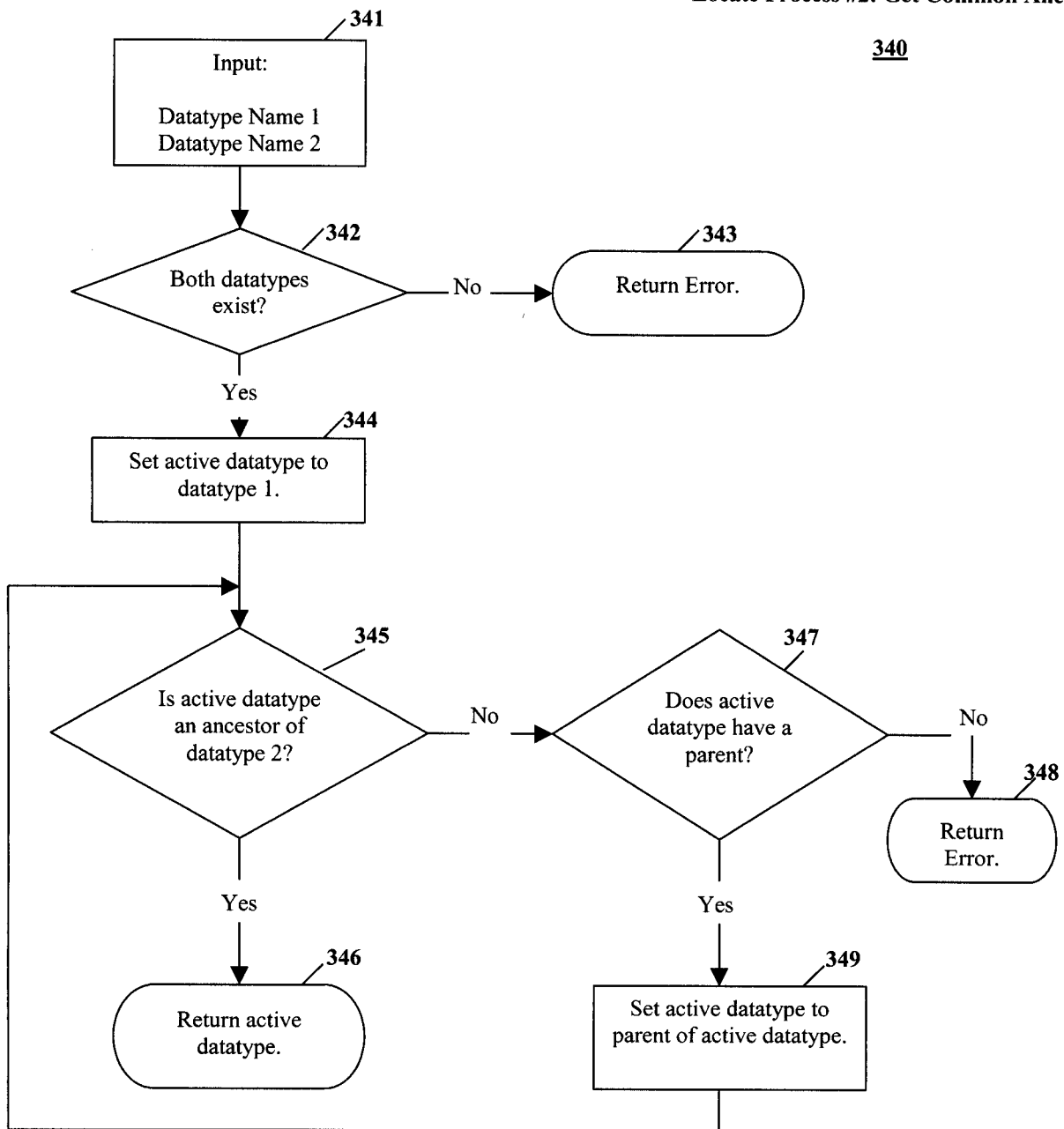
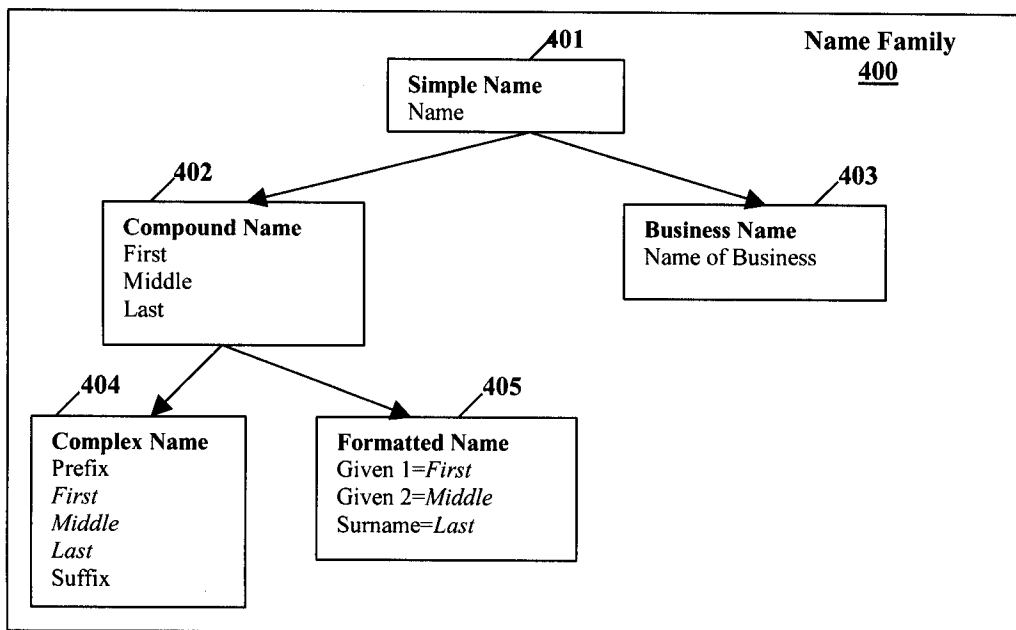
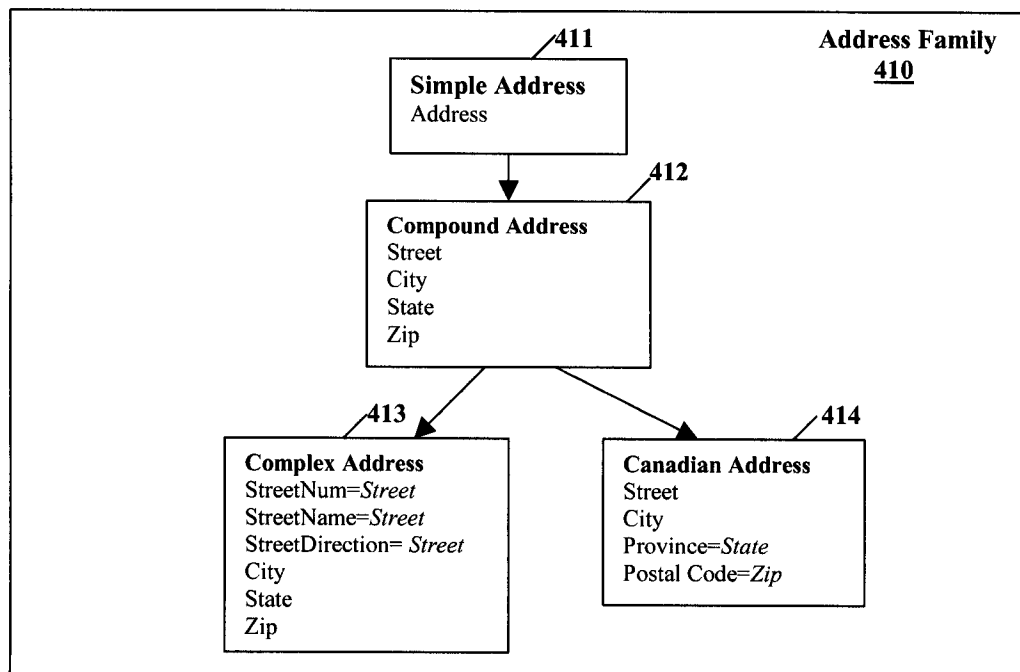
340

FIG. 3E



**FIG. 4A**



**FIG. 4B**

```

<SimpleName/>

<CompoundName instanceOf="SimpleName">
    <First/>
    <Middle/>
    <Last/>
</CompoundName>

<ComplexName instanceOf="CompoundName">
    <Prefix insert="First"/>
    <Suffix/>
</ComplexName>

<FormattedName instanceOf="CompoundName">
    <Given1 alias="First"/>
    <Given2 alias="Middle"/>
    <Surname alias="Last"/>
</FormattedName>

<BusinessName instanceOf="SimpleName"/>

```

**500**

**FIG. 5A**

```

<Person>
    <Name instanceOf="CompoundName">
        <First/>
        <Middle/>
        <Last/>
    </Name>
    <Address instanceOf="CompoundAddress">
        <Street/>
        <City/>
        <State/>
        <Zip/>
    </Address>
    <DateOfBith instanceOf="Date"/>
    <SSN/>
</Person>

```

**510**

**FIG. 5B**

### Schema A

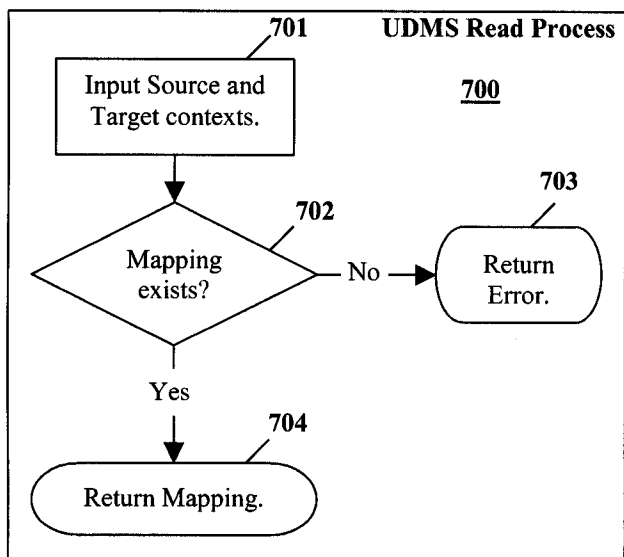
```
<CustomerInfo>
  <Name instanceOf="CompoundName">
    <First/>
    <Middle/>
    <Last/>
  </Name>
  <Address instanceOf="CompoundAddress">
    <Street/>
    <City/>
    <State/>
    <Zip/>
  </Address>
  <Race/>
  <Gender/>
  <DOB/>
  <Income/>
  <CreditInfo>
    <Type/>
    <Number/>
    <ExpirationDate/>
  </CreditInfo>
</CustomerInfo>
```

600

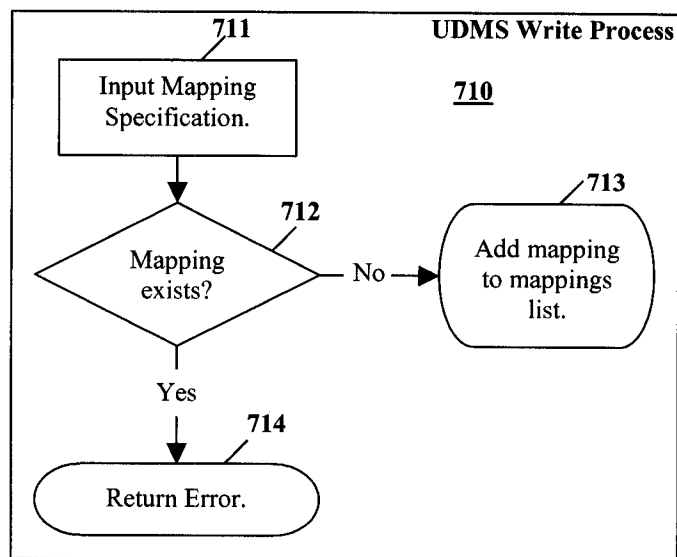
### Schema B

```
<Invoice>
  <Purchaser>
    <Name instanceOf="ComplexName">
      <First/>
      <Middle/>
      <Last/>
    </Name>
    <Address instanceOf="CanadianAddress">
      <Street/>
      <City/>
      <Province/>
      <PostalCode/>
    </Address>
    <CreditCard instanceOf="CreditCard">
      <Type/>
      <Name/>
      <Number/>
      <ExpiryDate/>
    </CreditCard>
  </Purchaser>
  <Product>
    <SKU/>
    <Description/>
    <Price/>
  </Product>
</Invoice>
```

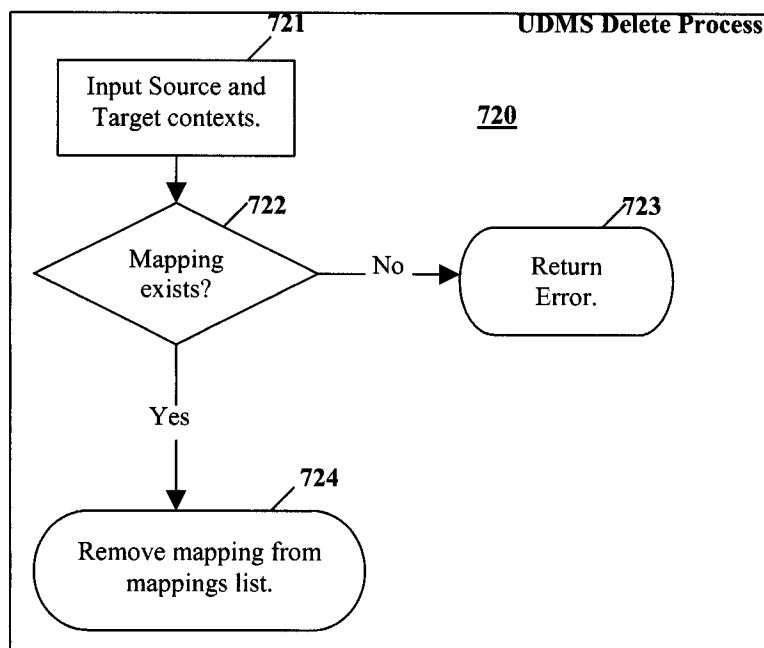
**FIG. 6**



**FIG. 7A**



**FIG. 7B**



**FIG. 7C**

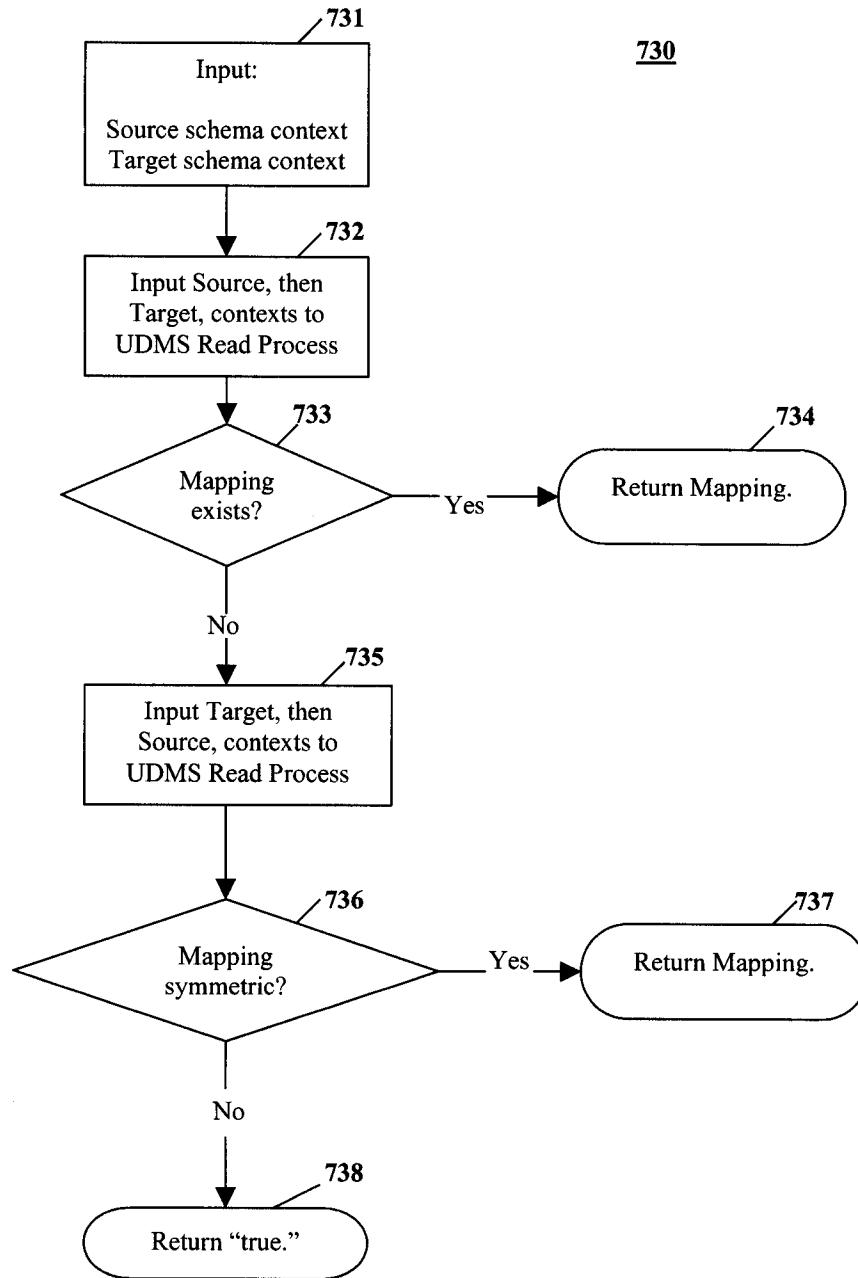
730

FIG. 7D

801  $CONTEXT\_MAP = SYMMETRIC\_DESIGNATION + \underline{SOURCE} + \underline{TARGET}$

802  $SYMMETRIC\_DESIGNATION = \text{indicates whether a } TARGET \Rightarrow SOURCE \text{ mapping is also implied}$

803  $SOURCE = \underline{SCHEMA\ CONTEXT}$

804  $TARGET = \underline{SCHEMA\ CONTEXT}$  800

805  $SCHEMA\_CONTEXT = \underline{PARENT\ ELEMENT\ CONTEXT} + DELIMITER + \underline{ELEMENT\ NAME}$

806  $PARENT\_ELEMENT\_CONTEXT = \underline{SCHEMA\ CONTEXT}$  of the element's parent (if one exists)

807  $DELIMITER = \text{some known character value that doesn't appear in the } \underline{ELEMENT\ NAMES} \text{ that make up this context}$

FIG. 8A

```
<Map symmetric="true">
  <Source>CustomerInfo</Source>
  <Target>Invoice/Purchaser</Target>
</Map>

<Map symmetric="false">
  <Source>Incident/Suspect</Source>
  <Target>AuctionCompany/Auctions/Seller</Target>
</Map>
```

810

FIG. 8B

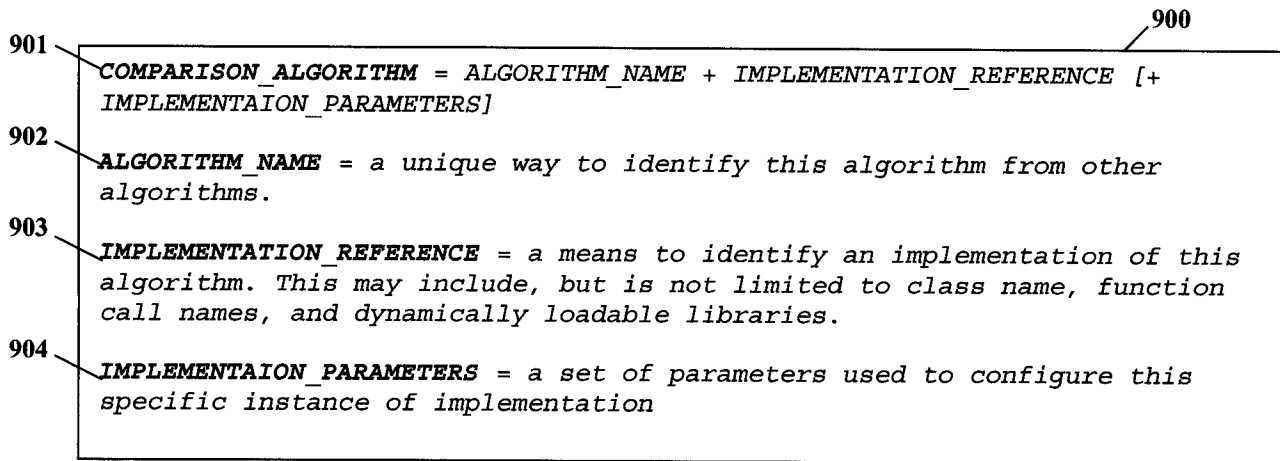


FIG. 9A

```
<STRING_DIFFERENCE class="com.company.comparisons.StringDiffScore"/>

<SOUNDEX class=" com.company.comparisons.SoundexScore"/>

<NAME_SYNONYM class="com.company.comparisons.SynonymScore">
  <SIMILAR degree="0.9">
    <ELEMENT>Robert</ELEMENT>
    <ELEMENT>Bob</ELEMENT>
    <ELEMENT>Rob</ELEMENT>
    <ELEMENT>Bobby</ELEMENT>
    <ELEMENT>Robby<ELEMENT>
  </SIMILAR>
  <SIMILAR degree="0.85">
    <ELEMENT>John</ELEMENT>
    <ELEMENT>Johnny</ELEMENT>
    <ELEMENT>Jon</ELEMENT>
    <ELEMENT>Juan</ELEMENT>
    <ELEMENT>Jack<ELEMENT>
  </SIMILAR>
</SYNONYM>
```

910

FIG. 9B

**TABLE OF COMPARISON TYPES  
USED IN STRATEGIES OF TTE**

|   | <u>Inputs Received</u>  | <u>Success Indicators</u>   |
|---|---|---|
| <b>Context Comparison</b>                 | Source schema context.<br>Target schema context.  | Existence of mapping specification (including any symmetric versions) is found, using UDMS.   |
| <b>Element Comparison</b>                 | Two element names.<br>Name Comparison Algorithm.<br>Normalized threshold score.   | Calling the Name Comparison Algorithm with the two element names results in a normalized score equal to or greater than the threshold score.                |
| <b>Attribute Comparison</b>               | Two attribute values.<br>Attribute Comparison Algorithm.<br>Normalized threshold score.   | Calling the Attribute Comparison Algorithm with the two attribute values results in a normalized score equal to or greater than the threshold score.        |
| <b>Datatype Lineage Comparison</b>        | Two Datatype Names.<br>Reference to Lineage Comparison Algorithm that is registered with SSS.<br>Normalized threshold score.            | Calling the Lineage Comparison Algorithm with the two Datatype Names results in a normalized score equal to or greater than the threshold score.            |
| <b>Datatype Tree/Structure Comparison</b> | Two hierarchical data structures.<br>Reference to Tree Comparison Algorithm that is registered with SSS.<br>Normalized threshold score. | Calling the Tree Comparison Algorithm with the two hierarchical data structures results in a normalized score equal to or greater than the threshold score. |

**FIG. 10**

1101 *TTE = (STRATEGY) \**

1102 *STRATEGY = (COMPARISON\_TYPE) \**

1103 *COMPARISON\_TYPE = CONTEXT\_COMPARE | ELEMENT\_COMPARE | DATATYPE\_COMPARE |*  
*ATTRIBUTE\_COMPARE*

1104 *CONTEXT\_COMPARE = determines if a map exists in the User-Defined Mapping Services*  
*for two SCHEMA CONTEXTs (including a symmetric version).*

1105 *ELEMENT\_COMPARE = NAME\_COMPARISON\_ALGORITHM + THRESHOLD*

1106 *ATTRIBUTE\_COMPARE = ATTRIBUTE\_NAME + NAME\_COMPARISON\_ALGORITHM + THRESHOLD*

1107 *NAME\_COMPARISON\_ALGORITHM = a comparison algorithm registered in the Similarity*  
*Scoring Services that compares two ELEMENTS\_NAMES or two ATTRIBUTE\_VALUES and*  
*returns a normalized score.*

1108 *DATATYPE\_COMPARE = LINEAGE\_COMPARE | CHILD\_STRUCTURE\_COMPARE*

1109 *LINEAGE\_COMPARE = LINEAGE\_COMPARISON\_ALGORITHM + THRESHOLD*

1110 *LINEAGE\_COMPARISON\_ALGORITHM = a comparison algorithm registered in the*  
*Similarity Scoring Services that compares datatypes and returns a normalized*  
*score that indicates proximity of the data types are in their family tree.*

1111 *CHILD\_STRUCTURE\_COMPARE = TREE\_COMPARISON\_ALGORITHM + THRESHOLD*

1112 *TREE\_COMPARISON\_ALGORITHM = a comparison algorithm registered in the Similarity*  
*Scoring Services that compares two data hierarchies and returns a normalized*  
*score based on the similarity of their child structures.*

1113 *THRESHOLD = a normalized score indicating similarity or proximity.*

FIG. 11

```

<TTE>
  <STRATEGY>
    <MAP/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="exact" threshold="1.0"/>
    <DATATYPE compare="lineage" threshold="1.0"/>
    <ATTRIBUTE value="description" compare="exact" threshold="1.0"/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="exact" threshold="1.0"/>
    <DATATYPE compare="lineage" threshold="1.0"/>
    <ATTRIBUTE value="description" compare="string_diff" threshold="0.8"/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="exact" threshold="1.0"/>
    <DATATYPE compare="lineage" threshold="1.0"/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="exact" threshold="1.0"/>
    <DATATYPE compare="lineage" threshold="0.5"/>
    <ATTRIBUTE value="description" compare="exact" threshold="1.0"/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="exact" threshold="1.0"/>
    <DATATYPE compare="lineage" threshold="0.5"/>
    <ATTRIBUTE value="description" compare="string_diff" threshold="0.8"/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="exact" threshold="1.0"/>
    <DATATYPE compare="lineage" threshold="0.5"/>
  </STRATEGY>
  <STRATEGY>
    <ELEMENT compare="string_diff" threshold="1.0"/>
    <DATATYPE compare="structure" threshold="1.0"/>
    <ATTRIBUTE value="description" compare="string_diff" threshold="0.8"/>
  </STRATEGY>
</TTE>

```

**FIG. 12**

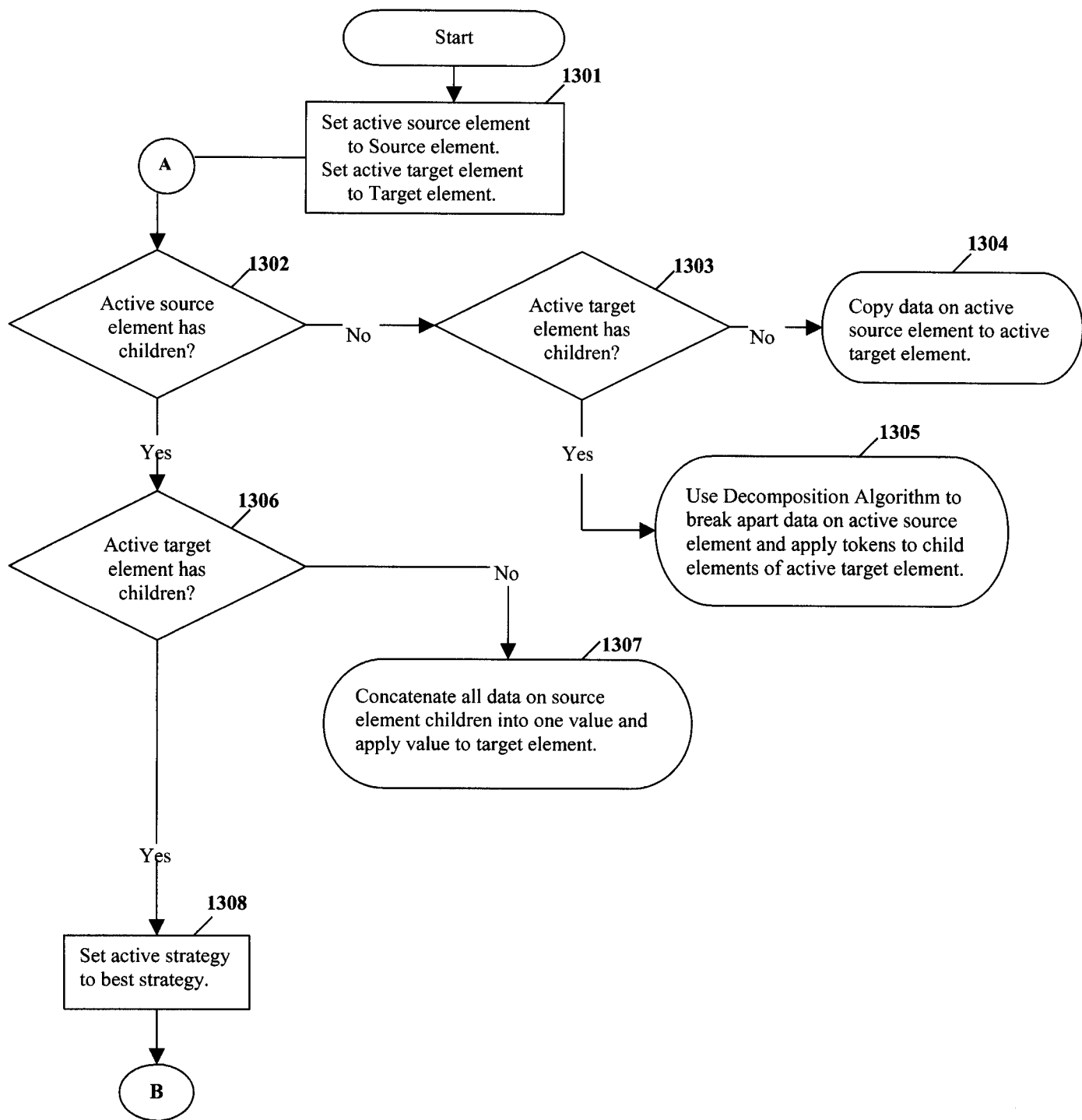
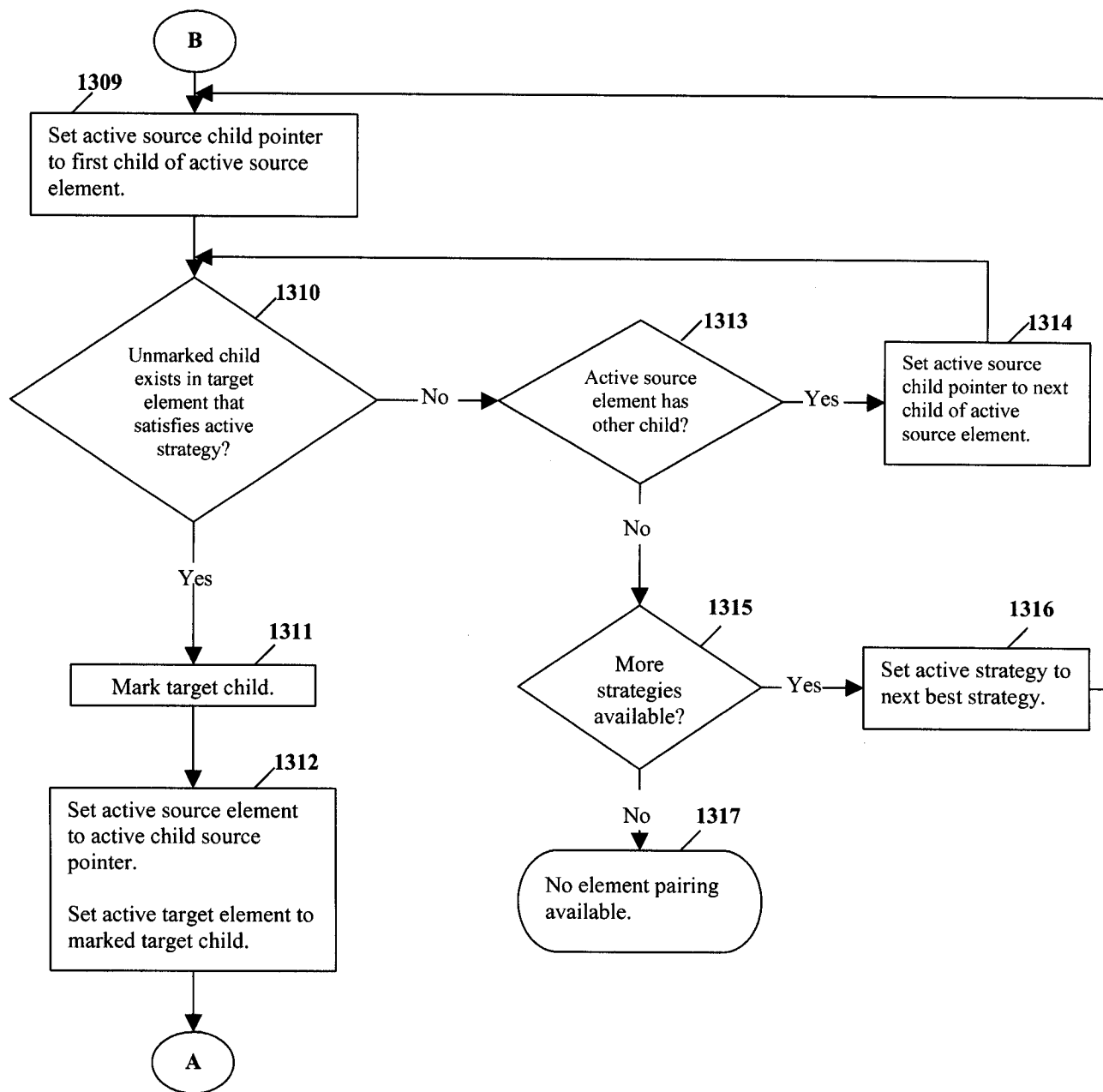
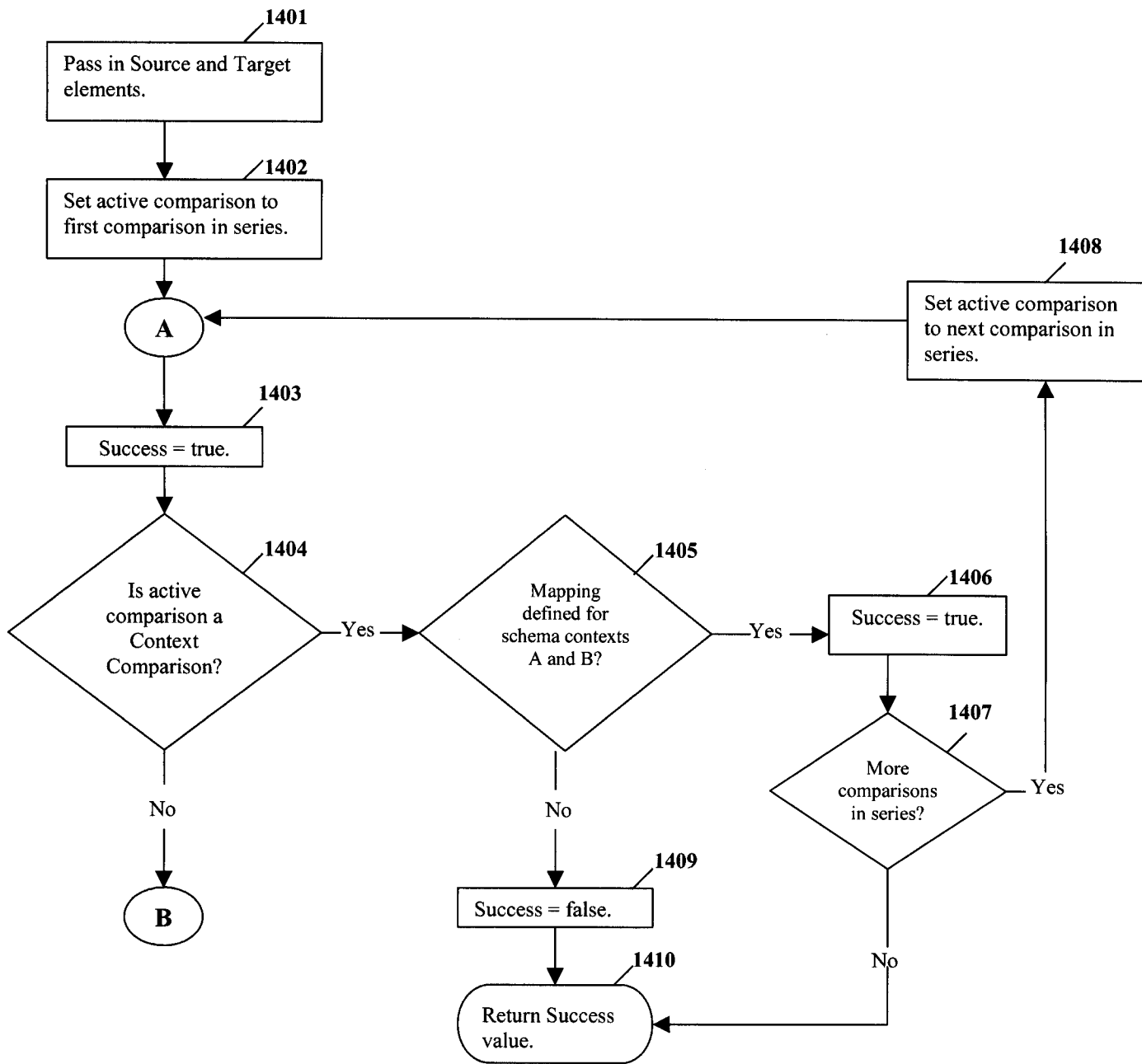


FIG. 13A



**FIG. 13B**



**FIG. 14A**

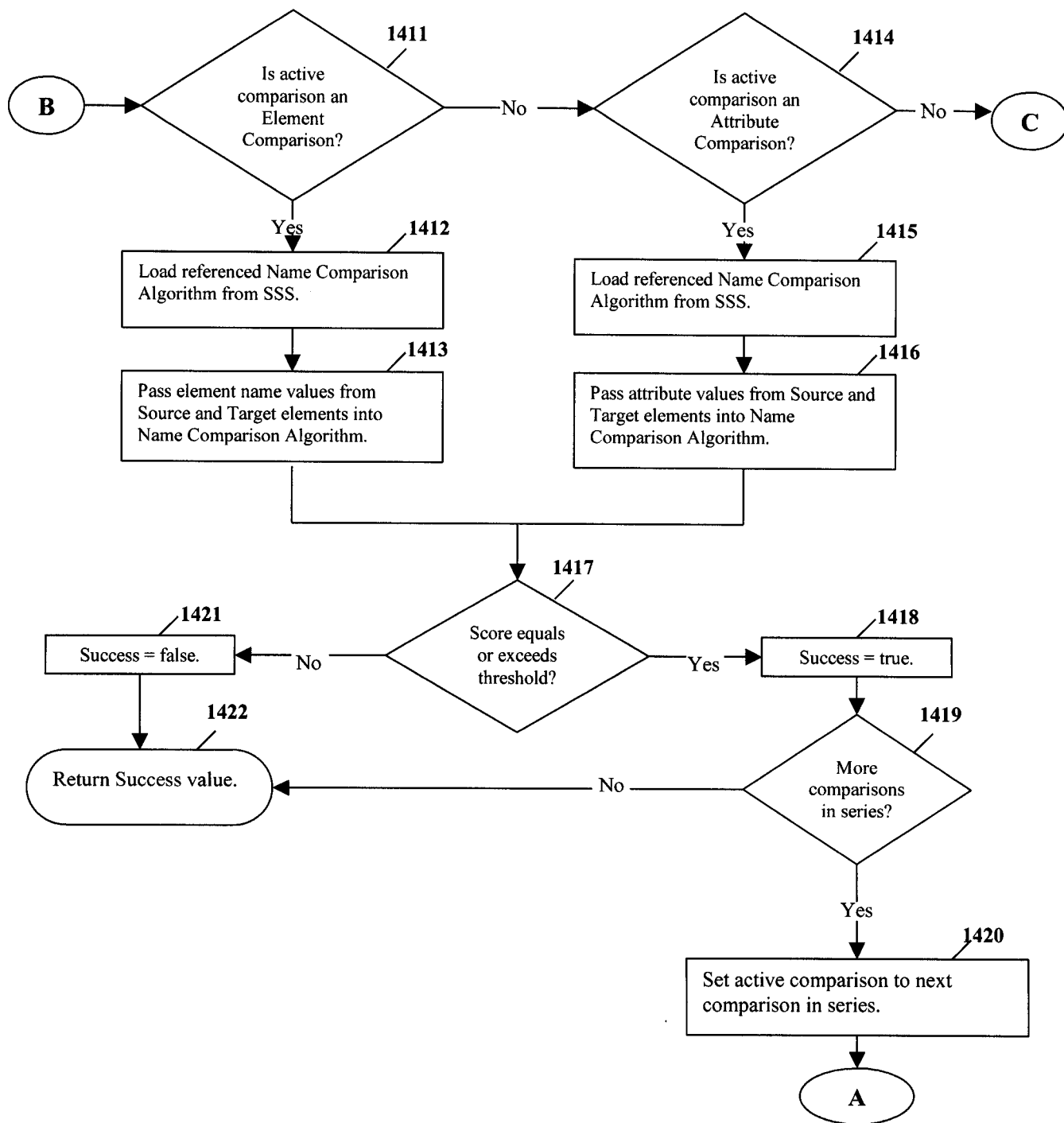


FIG. 14B

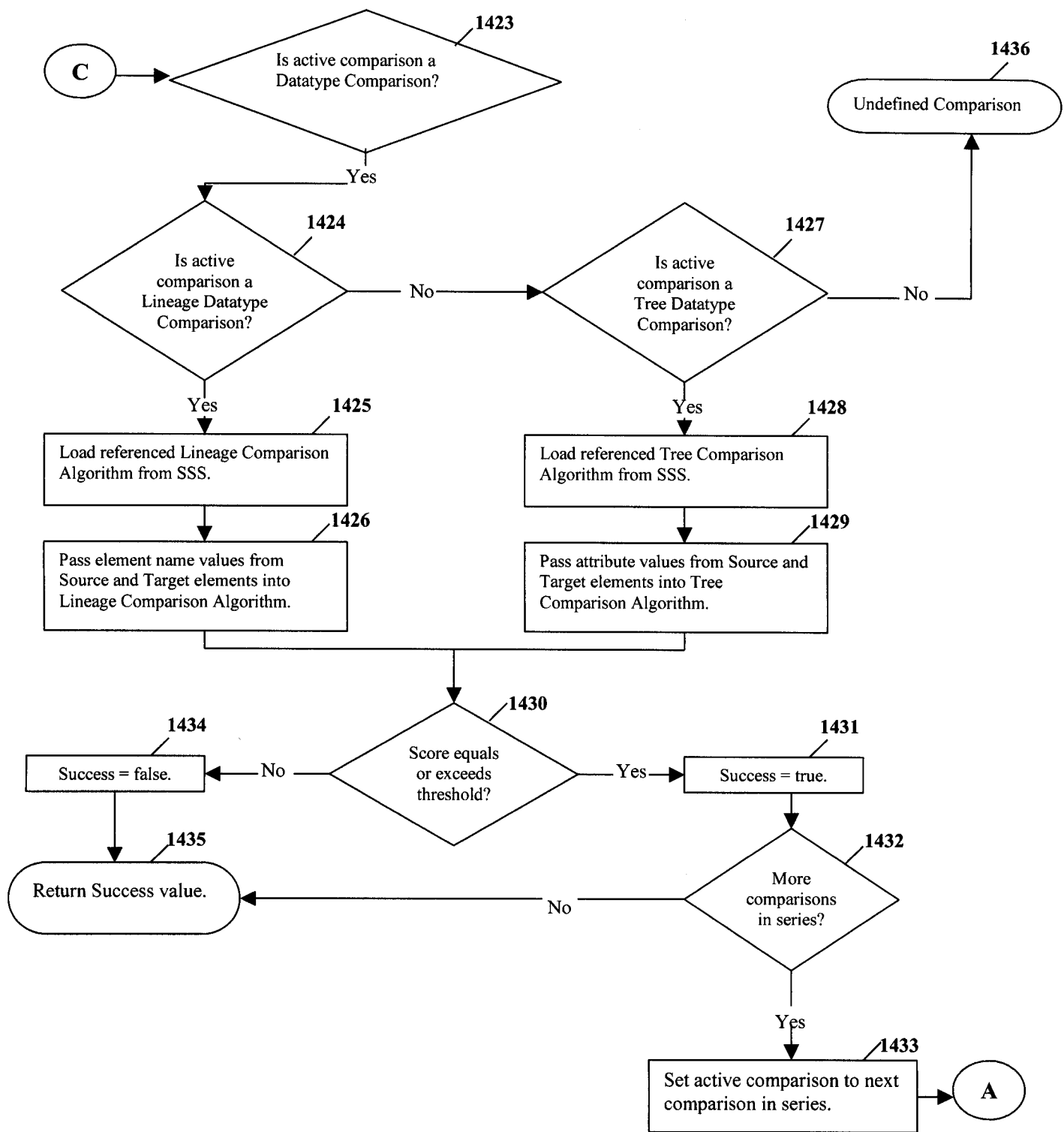


FIG. 14C